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# THE AGRICULTURAL SITUATION

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*A Brief Summary of Economic Conditions*

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FARM REAL ESTATE values on July 1, 1944, were 42 percent above the 1935-39 average, with values in many areas already above averages likely to be maintained if prices of farm commodities return to pre-war levels. Volume of voluntary sales for the 12 months ended in March was the highest on record, 10 percent above the previous peak in 1919. Total farm mortgage debt stood at 5.6 billion dollars at the beginning of 1944, nearly a billion dollar reduction from four years earlier. \* \* \* The parity ratio, that is the ratio of prices farmers receive to prices they pay plus interest and taxes, has been declining steadily for over a year, being 113 on mid-July, five points below a year earlier. However, the prices of all principal farm products except wheat, cotton, peanuts, and eggs were at or above parity on July 15. \* \* \* The expected 746 million chickens to be raised on farms in 1944 is a fifth lower than last year's wartime peak even though 9 percent above the average for the ten years, 1933-42. This will mean slightly reduced supplies of chicken and fresh eggs this winter. \* \* \* The wheat surplus above domestic requirements from this year's estimated world production will go far to cover world trade without greatly reducing reserves in exporting countries.

# Commodity Reviews

## FARM INCOME

IF A CITY man asks a farmer, "How much is a cow worth?" the conversation will run like this: "What kind of a cow?" "Oh, just any cow." "I'm sorry, but I can't answer until I know what kind you mean. The value runs from a few dollars for a worn-out critter to hundreds of dollars for a top-quality purebred animal."

Farm economists are sometimes asked "How much was farm income last year?" It's about as hard to answer that question simply, as to give one price that will fit all kinds of cows in all parts of the country.

There are many breeds of agricultural income. Each is correct if rightly used and understood. They seem to conflict only if used by one who ignores the differences among them.

The best way to understand what farm income figures mean is to put them together and take them apart again. First, what items go into gross income? Second, how is gross income paid out or distributed to different groups?

The principal item in gross income is cash receipts from farm marketings of crops and livestock. Because cash receipts are commonly called cash income from marketings, many people mistake this item for net income and think it comparable to the net income of a business or the incomes of wage earners. Cash receipts are simply the volume of crops and livestock sold by farmers, times the prices they get at their local markets. Expenses of production are not taken out of this figure. Cash receipts are sometimes reported with Government payments to farmers included; sometimes with Government payments left out. Either is correct, depending on the way it is to be used. Gross farm income includes cash receipts from marketings, plus the value of products kept on

the farm for home consumption, plus the rental value of farm homes.

Gross farm income minus total production expenses gives the realized net income from current operations of farm operators. To net income of farm operators, add an adjustment to take care of increase or decrease in inventory, plus farm wages (cash, goods, or services) paid to laborers living on farms and you have the net income of persons on farms from farming. To net income of persons on farms from farming, add the payments of mortgage interest, wages and rent that go to nonfarm persons and you end with net income from agriculture. Ask simply for "net farm income" and the reply you get probably will be net income of farm operators; but the answer will be equally correct if it is net income of persons on farms from farming or net income from agriculture, depending, of course, on the use to be made of the figure.

The adjustment for changes in inventory is necessary for comparisons between the net income of the farm and nonfarm population because changes in inventory are usually taken into account in determining the net income of nonfarm businesses. The actual value of crops and livestock carried over may differ, later on when sold, from the theoretical value at the end of the year. Therefore changes in inventory are not included in the net income of farm operators.

At first thought, it seems odd that the rental value of the farm home is counted as income. But the farmer who owns his home derives an income from his investment, corresponding roughly to the rent he would have to pay if he lived in a rented house, less his expenses for taxes, interest, insurance, and repairs. In the estimates of farm income the rental value of the owned farm home is included in gross income and these expense items are included in production ex-

penses which are taken out to get net income. Only the net return on the investment in the home, therefore, is included in net income.

On rented farms, the rent for the house is almost always included with the rent for the barns and the fields in one lump sum. But rent for the house is not actually a production expense and therefore must be separated in some way from rent for the rest of the farm, to get at a net income figure which can be compared fairly with nonfarm income. It could be done by omitting the rental value of the dwelling from gross income and from production expenses. It actually is done by including rental value in gross income but including home maintenance costs in production expenses, taken out to get net income. The method used raises the gross income figure a little over what it would be otherwise; but the net income of the renting farmer is the same by either method. Because net income is the important thing, the method makes little difference if it is understood by those who use the gross income figures.

Lesser breeds of income are sometimes published that have their special uses, but add to the bewilderment of the man who hopes to find one simple figure on "farm income." There is net cash farm income, for example, which merely subtracts cash production expenses from cash receipts. A figure no longer published by the Department of Agriculture is the gross value of agricultural production. Counting the value of feed twice—once as feed and again after it was fed to livestock—this figure was a booby trap for the unsuspecting who confused it either with cash receipts from marketings or with gross (or even net) farm income. Wages earned in town by part-time farmers, interest on bonds, or other income from nonfarm sources may be added to one of the various types of net farm income to get total income of farm operators or of persons on farms.

Cash receipts are useful as a rough measure of the volume of farm prod-

ucts moving to market; cash receipts including Government payments are a better gage of the immediate buying power of farmers; net income is a better thermometer to measure the general health of agriculture. Correctly used, each type of income estimate is a useful instrument; carelessly handled, any one of them may be misleading.

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### 1943 Income from Agriculture

(Millions of dollars)

Item	Exclud- ing Gov- ernment pay- ments	Includ- ing Gov- ernment pay- ments
Farm operators:		
Cash receipts from marketings.....	19, 252	19, 924
Nonmoney income.....	2, 814	2, 814
Gross income .....	22, 066	22, 738
Production expenses .....	10, 617	10, 692
<b>Realized net income.....</b>	<b>11, 449</b>	<b>12, 046</b>
Adjustment for changes in inventory.....	+260	+260
Farm wages to laborers living on farms.....	1, 359	1, 359
Net income from agriculture to persons living on farms.....	13, 068	13, 665
Net income from agriculture to persons not living on farms.....	2, 022	2, 097
<b>Total net income from agricul- ture.....</b>	<b>15, 090</b>	<b>15, 762</b>

<sup>1</sup> Includes \$75,000,000 in Government payments to nonfarm landlords.

### FOOD SUPPLIES

FOR the year 1944 as a whole, civilian food consumption is expected to equal that of 1943. When allowances are made for probable production of town and city gardens, consumption in both years reached the peak 1941 level, which was 8 per cent above the average of 1935-39. Food supplies as a whole will be relatively plentiful this fall and winter because the somewhat smaller supplies of meats and dairy products will be offset by larger supplies of fresh fruits, vegetables, and cereal products.

The civilian food supply is being maintained at this high level despite large war requirements because of the



tremendous increase in total food production since the beginning of the war. Food production in 1944 is expected to be 38 percent above the 1935-39 average and almost 5 percent larger than last year. Most of this increase over 1943 is in food grains (largely wheat), fruits, truck crops and meats.

### 1944 Food Production

Food group	1944 as a percentage of—		
	1935-39 average	1942	1943
Food grains.....	156	112	137
Truck crops.....	138	107	114
Fruits.....	119	102	112
Vegetables <sup>1</sup> .....	112	108	88
Sugar crops.....	83	75	104
Total food crops.....	132	106	114
Meat animals.....	156	118	104
Poultry.....	150	115	99
Dairy products.....	113	99	100
Total food livestock....	141	112	102
Total food production.....	138	110	105
Civilian food consumption per capita.....	107	100	101
Total agricultural production.....	131	106	102

<sup>1</sup> Excludes truck crops.

### WHEAT

**E**ARLY in July the Commodity Credit Corporation announced its policy to purchase wheat at 1 cent under the loan rate, and at the same time the rate was increased 7 cents from 85 to 90 percent of parity. A price floor was thereby established. The attitude of farmers on storing will largely determine the duration of the seasonal low level following harvest. The availability of storage space, both farm and terminal, and the trend of wheat prices in recent years may be expected to influence many farmers to hold their wheat. After the harvest movement is over, the heavy demand for nonfood as well as food uses is expected to be an important price strengthening factor.

The indicated wheat crop will about take care of the estimated 1944-45 disappearance, moderately below 1943-44, which reflects reduced feeding prospects. Total use of wheat for food, seed, and alcohol may be about the same as in the year just past. The reduction in feeding is expected to be partly offset by increased exports.

### FATS AND OILS

**P**RODUCTION of fats and oils from domestic materials in 1944-45 may total about 10 billion pounds, 1.4 billion pounds less than the record output in 1943-44 and also less than the 10.7 billion pounds produced in 1942-43. Principal reduction in output will be in lard.

The import outlook of fats and oils is uncertain, but no important increase over the rate of close to 1 billion pounds maintained in each of the past 2 years is indicated.

The supply situation for fats and oils is expected to tighten in 1944-45. Demand will probably continue strong in late 1944 and early 1945, and prices of most fats and oils are likely to be at ceiling levels.

### DAIRY PRODUCTS

**M**ILK production on farms in the first half of 1944 was 61.7 billion pounds compared with 61.6 billion for the same period last year. If pasture conditions remain about average and with livestock-feed ratios continuing more favorable for dairy production than other livestock enterprises, total milk production for 1944 may be about the same as the 118 billion pounds in 1943.

Butter production for the first 6 months has been lagging behind the same months of last year. However, American cheese, evaporated and condensed milk production during the second quarter was greater than the previous year.

## POULTRY AND EGGS

**R**EFLECTING below-average poultry-feed price relationships this past spring plus a rather tight feed supply situation, poultry-producing operations are being reduced considerably from a wartime peak of 1943-44. The preliminary estimate of the number of chickens raised on farms in 1944 is 746 million birds, a reduction of 20 percent from 1943 but 9 percent above the average for the 10 years, 1933-42.

The smaller number of birds raised will begin to be reflected in a decline in egg production by early fall. With consequent smaller supplies of freshly produced eggs for civilian consumption, prices received by farmers for eggs will continue to advance seasonally. Because of record quantities of shell and frozen eggs in storage total civilian supply for the last 6 months of 1944 will differ little from a year earlier.

Chicken prices may decline a little below ceilings in the period of heaviest marketings but prices of turkeys are likely to continue at ceilings. WFO 106 restricts sales of turkeys in some areas of the Nation in order to obtain supplies for military forces.

## LIVESTOCK

**C**ATTLE and calf shipment to feed lots and pastures in the Corn Belt during the first part of this year totaled less than during the first part of 1943. However, movement of stockers and feeders were larger during early summer, indicating an increase in cattle feeding this fall and winter from that of a year ago.

Prices for feeder cattle were materially lower than last year throughout early summer. A very large grain harvest is in prospect for this year and reductions in hog, poultry, sheep, and horse and mule numbers throughout the year will result in larger supplies of feed grain in relation to livestock numbers for the next feeding year.

Prospects are, quite favorable for relatively good prices for feed cattle in early 1945.

The lamb crop this year totaled 29.6 million head, 5½ percent smaller than last year. The number of lambs saved in all principal sheep States, except Texas, was smaller this year. The smaller crop this year was the result of fewer breeding ewes as the number of lambs saved per 100 ewes was larger than last year. A tendency to reduce breeding sheep numbers continues so that fewer breeding ewes will be on farms next year.

Hog marketing will increase during the fall and winter as 1944 spring crop pigs become ready for market. However, smaller numbers of hogs for market will ease the burden on processing and storage facilities this fall and winter as compared to a year ago, when farmer-owned hogs remained unsold for several days at stockyards, markets operated on permit-to-market systems and employed embargoes, and prices were depressed to support levels.

## FRUIT

**T**OTAL civilian supplies of fresh deciduous fruit from this year's large production are expected to be considerably larger during late summer and fall than a year earlier. The prospective peach, apple, and pear crops are larger than the short crops last year, but the prospective prune, grape, and cranberry crops are smaller. Supplies of fresh citrus fruit will be short seasonally during late summer and early fall until the new crop, which is expected to be as large as or larger than the record crop of the current season, begins to move to market.

Civilian supplies of canned fruit may be slightly smaller than a year earlier. Prices for peaches and prunes are expected to average lower this season than last, because of larger supplies and recent price ceilings.

# Index Numbers of Prices Received and Paid by Farmers

[1910-14=100]

Year and month	Prices received	Prices paid, interest and taxes <sup>1</sup>	Parity ratio <sup>2</sup>
1943			
January.....	181	156	116
February.....	184	158	116
March.....	192	159	121
April.....	197	160	123
May.....	194	162	120
June.....	195	163	120
July.....	193	164	118
August.....	192	164	117
September.....	193	164	118
October.....	194	165	118
November.....	194	166	117
December.....	196	167	117
1944			
January.....	196	168	117
February.....	195	169	115
March.....	196	169	116
April.....	196	169	116
May.....	194	169	115
June.....	193	170	114
July.....	192	170	113

<sup>1</sup> Revised.

<sup>2</sup> Ratio of prices received by farmers to the revised index of prices paid, interest, and taxes.

## VEGETABLES

**M**OST fresh vegetables will be plentiful during August and September, with the total summer production averaging about 13 percent larger than last year. However, tomato supplies may be slightly smaller than a year earlier. Price levels of vegetables for fresh market will probably follow a downward seasonal movement during the summer months of peak total supply.

Production of vegetables for processing is likely to be about as large as last year. While the pack of canned vegetables is expected to be about the same as last year, civilian supplies will probably be a little smaller due to increased requirements for the military and other Government agencies.

## POTATOES

**W**HITE potato supplies will be smaller this fall and winter than a year earlier. The 1944 expected total crop of 399 million bushels is 65

million bushels less than last year's record crop, but such a crop would be the second largest of any year since 1934. Production in the intermediate States, where harvesting is now in progress, is estimated to be about 22 percent less than last year. Ceiling prices on white potatoes established by the Office of Price Administration, effective July 15, 1944, are the same as last year except for States where increases were made because of low yields.

A sweetpotato crop of 66 million bushels is expected, about 9 percent less than the 1943 crop.

## FARM LABOR

**M**EETING the usual summer rush of farm work has been made more difficult by an accumulation of work left undone because of a late spring in many parts of the country, and by further losses of workers to the armed forces and war industries. However, bumper crops are being handled, without significant losses, through skillful management, efficient use of machinery, exchange of work between farms and the employment of unusually large numbers of women, children, townspeople, Jap evacuees, war prisoners, and foreign importees.

Farm wage rates are higher than ever before, and in California, and a few other States ceilings have been placed on wages received by workers performing certain jobs such as the harvest of asparagus, hay, potatoes, oranges, peas, cherries, apricots, lettuce, and peaches, and for certain workers on dairy farms.

## LUMBER

**B**ECAUSE of extremely tight lumber supplies the War Production Board is attempting to limit consumption to essential uses and to balance use with production. Accordingly, farm use of lumber is restricted to only that which is necessary and where other building mate-



rials cannot be used. In addition, more lumber production on farms is being encouraged. But WPB recognizes the essential nature of many farm lumber requirements and is allocating supplies for farm building maintenance and repair as well as for a limited amount of new construction.

During the July-September quarter the lumber allocation is large—about a third of the farmers' annual supply—but in the next quarter the allocation will be reduced to only about 15 percent of the farmers' annual supply.

Generally speaking, farmers will get their lumber by applying for certificates from county AAA committees and then presenting these certificates to lumber dealers. In some localities, however, farmers may obtain up to 300 board feet of lumber simply by signing applications for certificates at local lumber yards.

Certificates are not needed for purchases of fence posts, shingles, plywood, millwork, or for lumber sawed

at a sawmill producing less than 100,000 board feet per year.

Certificates may be issued for maintenance and repair of farm implements and buildings (excluding farm houses), emergency rebuilding of any farm building (except where the cost exceeds \$5,000 or where the Red Cross issues certificates in case of widespread damage), construction of farm buildings other than houses provided that new construction will not cost more than \$1,000 on the farm during the calendar year, and construction necessary to prevent threatened loss of farm products.

For most new construction costing more than \$1,000 in a year, farmers must apply to WPB field offices through county AAA committees.

## FARM MACHINERY

REFLECTING the more favorable supply of new farm machinery, only 19 items will be rationed in the

### Prices of Farm Products

Estimates of average prices received by farmers at local farm markets based on reports to the Bureau of Agricultural Economics. Average of reports covering the United States weighted according to relative importance of district and State

	5-year average		July 1943	June 1944	July 1944	Parity price July 1944
	August 1909-July 1914	January 1935-De- cember 1939				
Wheat (bushel).....dollars..	0.884	0.837	1.26	1.43	1.39	1.50
Corn (bushel).....do.....	.642	.691	1.08	1.15	1.17	1.09
Oats (bushel).....do.....	.399	.340	.656	.788	.764	.678
Rice (bushel).....do.....	.813	.742	1.78	1.75	1.75	1.38
Cotton (pound).....cents..	12.4	10.29	19.60	20.16	20.32	21.08
Potatoes (bushel).....dollars..	.697	.717	1.65	1.25	1.38	1.23
Hay (ton).....do.....	11.87	8.87	11.90	15.00	13.90	20.20
Soybeans (bushel).....do.....	2.96	.954	1.70	1.93	1.91	1.63
Peanuts (pound).....cents..	4.8	3.55	7.15	7.84	7.75	8.16
Apples (bushel).....dollars..	.96	.90	2.55	3.14	2.63	1.63
Oranges, on tree, per box.....	1.81	1.11	2.74	2.45	2.94	1.99
Hogs (hundredweight).....do.....	7.27	8.38	13.20	12.60	12.70	12.40
Beef cattle (hundredweight).....do.....	5.42	6.56	12.40	12.00	11.70	9.21
Veal calves (hundredweight).....do.....	6.75	7.80	13.90	13.20	13.00	11.50
Lams (hundredweight).....do.....	5.88	7.79	13.30	13.20	12.70	10.00
Butterfat (pound) <sup>1</sup> .....cents..	26.3	29.1	49.2	50.2	5.02	111.7
Milk, wholesale (100 pounds) <sup>2</sup> .....dollars..	1.60	1.81	13.08	13.11	13.15	2.53
Chickens (pounds).....cents..	11.4	14.9	25.3	23.8	24.2	19.4
Eggs (dozen).....do.....	21.5	21.7	36.3	28.1	31.2	33.7
Wool (pound).....do.....	18.3	23.8	141.4	42.0	42.7	31.1

<sup>1</sup> Revised.

<sup>2</sup> Comparable base price, August 1909-July 1914.

<sup>3</sup> Comparable price computed under sec. 3 (b) Price Control Act.

<sup>4</sup> Comparable base price, August 1919-July 1929.

<sup>5</sup> Does not include dairy production payment made directly to farmers by county A. A. A. Office.

<sup>6</sup> Adjusted for seasonality.

<sup>7</sup> Preliminary.

current season compared with 31 items for the season ending June 30, 1944. The rationed items in the current season include farm tractors, garden tractors, combines, corn pickers, corn binders, mowers, side delivery rakes, hay loaders, windrow pick-up balers, grain drills, potato planters, potato diggers, manure spreaders, ensilage cutters, power sprayers, farm milk coolers, irrigation pumps, power pumps, deep and shallow well water systems. Most of the important shifts in acreages of war crops have now taken place and there is less need for rationing than was the case before war crops became established.

With farm machinery production during the year beginning July 1, 1944, expected to be about the same, as the relatively high output of 1940, the supply of new machinery should be in better balance in relation to needs than has been the case in any year since 1941. To be sure, many more machines could be sold than will be available, for many farmers now with financial resources for replacing

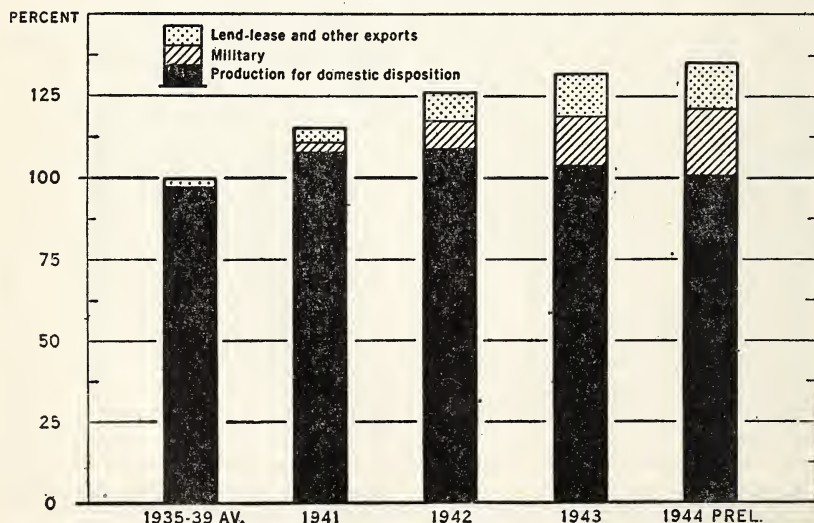
badly worn and obsolete machines will be able to meet only their most urgent needs in 1944-45.

For practically all kinds of power machines, numbers available for use in 1944 will be the largest of record. These numbers include the machines on farms plus current production. For important labor-saving machines such as combines, corn pickers, windrow pick-up balers, power mowers, and milking machines, there will be at least 25 percent more on farms than when the United States entered the war.

The number of surplus Army trucks becoming available to farmers and haulers of agricultural products are far short of demand but large enough to ease some of the most critical transportation problems. When such trucks are available for distribution in a county for agricultural use, those who can show critical need may apply to the AAA committee. The county committee will arrange, through the cooperation of dealers, for the purchase by applicants certified on the basis of relative need.

# MILITARY AND LEND-LEASE REQUIREMENTS COMPARED WITH PRODUCTION OF FOOD COMMODITIES FOR SALE AND FARM HOME CONSUMPTION

INDEX NUMBERS (1935-39=100)



U.S. DEPARTMENT OF AGRICULTURE

BUREAU OF AGRICULTURAL ECONOMICS

# Urban and Rural Price Indexes Differ

FROM December 1940 to March 1944, prices paid by farmers for commodities used in the farm household rose 45 percent. During the same period the cost-of-living index of the Bureau of Labor Statistics for workers in large cities advanced only 23 percent. Questions are frequently raised as to the reasons for this wide difference. Interest in this subject has been particularly manifest since the outbreak of the present World conflict and the subsequent effort of the Government to keep prices from developing inflationary tendencies.

This interest has been accentuated not only by the sharper general advance in prices paid by farmers as reported to the Bureau of Agricultural Economics, but because all of the subgroups of this index have advanced more rapidly than the corresponding components of the urban cost-of-living index during this period. For example, prices paid by farmers for food increased 53.7 percent; clothing, 56.7; house furnishings, 44.8; farm home building materials, 27.4. In contrast, prices paid by urban workers in large cities for food were up 37.8 percent; clothing, 34.5; house furnishings, 28.5; rent, 3.1. The differences in the trends of these indexes, while quite significant, are largely due to the different kinds and qualities of goods farm and city people purchase. The indexes are not only unlike in purpose, in items included, and in populations and areas covered, but also in reflecting differences in urban and rural buying habits.

## Purposes Differ

When the Bureau of Agricultural Economics constructed its index, it had in mind the development of a measure of the general trend and level of the prices paid by farmers for commodities bought, which could be compared with its long-established index of prices received by farmers for the products they sold at local markets. The ratio

obtained by dividing prices received by prices paid was then used as one indication of the purchasing power of the farm dollar and the economic status of the American farmer. The index of prices paid for commodities used in family living was developed as a natural component of the general prices paid index. It does not include any charges for rent, nor does it make any allowance for changing service costs. In other words, the index of prices paid for farm family living is not a complete cost of living measurement for people living in rural areas.

The Bureau of Labor Statistics, on the other hand, constructed its index with the thought and full knowledge that this index of the retail prices of commodities and services used by city families would approximate the general trend and level of living costs in large cities. This index is practically a complete cost-of-living index since it includes not only the usual commodities purchased by city families but also the many services which these families must pay for in order to maintain their accustomed style of living.

## Buying Habits Unlike

Farmers, on the average, have less cash income and usually live more frugally than most urban workers. Consumer income surveys indicated that the annual per capita cash income of farm families was \$175 in 1935-36. Despite the fact that farm families receive most of their housing and about a half of their food supply from the farms they operate, their per capita cash and non-cash income combined was not equal in value to the \$423 annual per capita income of wage earner and clerical families in large cities during the 1935-36 period. As a result, farm families generally buy lower priced clothing and they spend less for movies, newspapers, magazines, pleasure trips, and other items which are luxuries to farm people but



may be considered necessities by city people who, in many cases, live under crowded conditions and have more leisure time. Farmers, having less cash to spend, concentrate their purchases more in lower-priced lines than urban workers do.

Examination of the prices paid by farmers and urban families shows quite clearly that when prices are rising, the relative and absolute increases for the low-priced lines in all communities are generally greater than for the medium-quality lines bought by many urban workers. This tendency, coupled with the leveling influence of price ceilings and the disappearance of many low-quality lines from retailers' shelves, has resulted in the converging toward a common level of a number of items in both the BLS and BAE indexes. With the prices paid by farmers starting at lower levels, this helps to explain in part the more rapid rise in the BAE index.

#### **Groups Covered Vary**

Farm and city families not only have unlike buying habits, but they are distributed throughout the United States in significantly different proportions. Nearly 54 percent of the farm population is located in the South Atlantic and South Central States where the greatest retail price increases, as measured by either the BAE or the BLS, have occurred since the beginning of the present war. Large-city populations are concentrated in the North and East where the smallest retail price increases have been noted.

Data used in the construction of the BAE index is obtained by weighting state average prices by the importance of the farmers' purchases in the various regions of the country. The BLS index is constructed by preparing separate indexes for each of the 34 large cities and then combining them into a national index according to the population of the large cities of the regions covered. This difference in regional weighting brought about

by the difference in the population distribution plays an important part in accounting for the more rapid rise in the BAE index than in the BLS series. One example has been worked out for food prices to show the effect of this factor. By applying the BAE regional weights to the BLS food price changes, December 1940 to March 1944, it was found that about one-seventh of the difference between the extent of the rise of the same food items in both large cities and in rural areas could be accounted for.

#### **Divergent Items**

By far the greatest difference between the BAE and BLS indexes, however, is the difference in the items included and their importance in the two indexes. As previously indicated, the BAE index of prices paid by farmers does not cover charges for rent and various services included in the BLS index. Even similar commodities or groups common to both indexes do not have the same weight in the two indexes nor are they made up of exactly the same items. For example, food has almost as much weight in the farm index as in the city index, but clothing and house furnishings have a much larger weight in the farm than in the urban index. These three price groups (food, clothing, and house furnishings) have all risen more rapidly than other groups, thus accentuating the spread between the increases shown by the two indexes.

In addition to such commodities as food, clothing, house furnishings, fuel, electricity, ice, and miscellaneous household operating items, the BLS index includes rent and costs of newspapers, medical and dental care, beauty and barber shop services, transportation fares, and motion picture admissions. These latter costs almost always show smaller changes during a given period of time than commodity prices, and this has been quite evident during the present war. Commodity prices, obtained by the BLS in large cities, advanced 32.1 percent from December 1940 to March 1944,



whereas rent was up only 3.1 percent and services 1.9 percent. The BAE index, giving no representation to these rent and service costs, should obviously have shown more of an increase than the BLS index during this period. In fact, if the BLS index included commodity prices only as the BAE index does, it would have risen 32 percent instead of 23 percent. Rents and services therefore accounted for 9 points or 40 percent of the difference between the indexes.

Considering all aspects, it should not be expected that changes in the general level of retail prices paid by

farmers for commodities used in their family living should follow the identical pattern as the average of prices paid for commodities, rent and services by urban workers. Not only do the methods used in constructing the respective indexes differ, but to the extent that farmers and city people buy different kinds of articles, and are concentrated in different trade areas operating under varying sets of supply and demand conditions, the general movement of prices paid by each group obviously would be different.

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*Bureau of Agricultural Economics*

## Entomologists Help Increase Crop Yields

**W**EATHER and crop pests are two major factors, other than soil fertility and farm management, which govern acreage yields.

About the weather not much can be done except learn how to take advantage of it when favorable, or minimize losses when unfavorable, or blame it for our mistakes.

Crop pests are a different story. Farmers can do something to safeguard crops against damage and loss from insects. Most of the scientific research, field tests, and experiments by Department of Agriculture entomologists are directed at finding out how to help farmers do this protective job most effectively by providing the practical tools by which it can be done. This kind of research has proved to have high practical value during the war in helping farmers maintain full production year after year.

### Big Crop Losses From Pests

Losses from insects may average as much as 10 percent per year, and may reach as high as 90 to 100 percent in limited areas for certain insects and crops. Much of these losses can be prevented through use of adequate insect controls. For example, in control work for protection against such an injurious pest as the grasshopper,

western farmers in some twenty States in past years have saved an average of 10 to 15 dollars worth of crops for every dollar spent in spreading poison bait. To protect their crops, produce better quality crops, and increase yields, more farmers now appreciate the value of insecticides and other control measures in meeting wartime production goals.

### Substitutes Meet Need

For this reason, too, much of the wartime research of entomologists is devoted to finding substitutes for major insecticides, principally rotenone and pyrethrum, in short supply because of the war. This research work has already paid high dividends to farmers in protecting critically needed food and seed crops. But, in addition to this value, some of the discoveries and methods developed by scientists to meet temporary insecticide shortage conditions, particularly the results of testing for insecticide substitutes and extenders, or stretchers, are proving to be permanent contributions of practical value to farmers and gardeners.

Much of this testing is aimed at decreasing the dosage required for insecticides in short supply. It has been found, for example, that the

thiocyanates, in combination with some quantities of rotenone, can reduce the percentage of rotenone needed for control of pea aphids. Ample supplies of thiocyanates are available for such uses. One of the dinitro compounds also has been found to reduce the need for pyrethrum and rotenone materials. As an alternative to rotenone and the arsenates, cryolite has proved to be adequate for early treatment of bean beetles and other insects. For protection of forests against defoliation, cryolite is now being used extensively in gypsy moth control work in New England, New York, and Pennsylvania, a use which will continue after the war ends. Cryolite is now plentiful and is used more extensively in dusts for vegetable crops and Victory gardens.

### Stretching Short Supplies

Of permanent peacetime value also is the discovery that certain diluents used in making up a dust mixture, reduce the dosages needed per acre. For example, pyrophyllite is much more satisfactory for mixture with rotenone dusts, and produces a higher kill of certain insects, than some other diluents. For cattle grub control, there is a satisfactory record of reducing the amount of rotenone by 40 percent through changing to pyrophyllite, as compared with materials previously used for carriers, such as sulphur and talc.

Synergists (a kind of extender) can be expected to have greater usefulness after the war, due to experiments which stretch the wartime supply of short materials. Synergists are not toxic themselves, but they make other materials more toxic when they are present. For example, in one experiment a synergist derived from castor oil increased the toxicity of pyrethrins about 100 times, making only 0.005 percent of pyrethrins highly effective. Another good example is the use of sesame oil with the aerosol "fine-fog" method of applying insecticides in which the sesame oil increases the

effectiveness of the pyrethrum portion. Such synergists enable the reduction of the concentration, and the need for and demand on short commercial supplies. Five or six of these synthetics have been found which stretch the supply, particularly of pyrethrum. Quite apart from supply questions, wartime synergists which markedly increase toxicity will have permanent post-war uses.

Relative quantities of insecticide supplies change rapidly. For example, in the work with the Army and Navy on louse control, Department entomologists late in 1942 uncovered DDT, a new insecticide, with the long chemical name of dichloro-diphenyl-trichloroethane. As soon as this was discovered to be effective for louse control, DDT relieved the demand on the pyrethrum supply and thus more pyrethrum could be used in the aerosol program.

### Weekly Insect Surveys

Another way found to stretch short supply is to obtain maximum use of the supplies locally available. The Bureau of Entomology and Plant Quarantine in cooperation with State agencies conducts extensive week-by-week insect pest surveys, particularly on those insects and for those crops which require the largest amount of the highly critical insecticides such as rotenone and pyrethrum. Among these insects are the bean beetle, the pea weevil and the pea aphid, which require a large proportion of the available rotenone supply. Weekly survey information enables insecticide manufacturers to move materials of limited supply to places where they are needed, thus avoiding tying up materials in those areas where there are no serious outbreaks. This same need exists in peacetime, whenever there is a general outbreak over extended areas.

Some of the surveys are conducted with a view to moving the supply of calcium arsenate at the time it is needed into places where there are severe outbreaks of cotton boll weevil and leafworm. Surveys are effective in filling up gaps in distribution where

otherwise there would be rather severe losses because materials were not being delivered at the time for most effective control.

### Aerosols Promising

The aerosol method of applying insecticides will be useful in the household field and in barns as well as in tents, barracks, and airplanes as now used by the United States Army. Recent work gives promise that they may be adapted to control of some insects attacking out-door crops. The aerosol, as developed by Department of Agriculture entomologists, is a method of atomizing insecticides in the form of an extremely fine spray which floats in the air and acts in some respects like a gas, providing more intensive coverage of a given area, killing more insects in a given time for quantity used than the usual oil spray. Aerosols are not now available to the public in any form, but experimental tests give every indication that the aerosol, or "fine-fog" method, of applying insecticides, is an important wartime contribution to future insect control.

For agricultural uses, the principle of the aerosol may be used to apply toxic materials in smokes. In the Cape Cod, New England, area, preliminary experiments using DDT in smoke for killing the gypsy moth caterpillars feeding on scrub oak have been highly effective. Entomologists are now conducting small-scale tests to determine how far smokes can be used with safety, how much of an area can be covered on the ground and in the air, and how much of the insecticidal effect of the toxic material is lost or persists when used in smokes.

The Department has been working closely with the U. S. Army and Navy in the development of aerosols for control of insects affecting man. Millions of aerosol dispensers have been shipped abroad for use by men overseas, principally in foxholes, pup tents, barracks, and airplanes, to kill

disease-carrying insects. This affects the current supply of pyrethrum which is used extensively in aerosol dispensers, making the domestic supply short. After the war, similar methods may be used in sprays for homes and farms. The typical aerosol dispenser is a small metal container filled with liquefied freon, a commonly used refrigerant, under about 80 pounds pressure. Pyrethrum or other insecticide is dissolved in the freon, which is nontoxic. A small valve can be opened to release the material which then comes out in an extremely fine spray and the freon evaporates. The material, toxic to insects, floats around in the air. To release enough from the "bomb" to kill all susceptible insects in a room of 2,500 cubic feet takes about 10 seconds. In addition to household uses, the aerosol dispenser method looks promising for protection of certain truck crops after the war.

### Spraying by Aircraft

Another promising wartime development has been aircraft spraying of highly concentrated insecticide material, particularly cryolite. Aircraft methods have been so developed during the war that afterward they may be used more than ground machines, where extensive areas must be treated, or to reach heretofore inaccessible forest areas where insect infestations build up and cause widespread outbreaks.

A new aircraft spraying device has been developed for applying highly concentrated sprays, greatly reducing the quantity of material needed per acre. Further, one plane can cover in one day with one ground crew as large an acreage as can 6 to 8 ground spray crews. After the war, when more planes are available to spray larger areas with insecticide concentrates, whether cryolite, arsenicals, or DDT, control of many pests will be easier, the incentive and practical means to protect crops will be greater, and it is reasonable to expect that



more crops and forests will be adequately protected.

### DDT No Panacea

As to DDT, by way of a short digression, entomologists of the Department have received and distributed small quantities of DDT widely throughout field testing stations to determine its effectiveness against agricultural pests in this country. As yet, results of small scale tests are preliminary only: much testing remains to be done to determine whether DDT will harm human beings, plants, livestock, other animals, and wildlife as well as pollinating insects such as the honeybee. A great deal is yet to be learned of how much DDT to use for control of most insects, and in what form it is best used and when. While preliminary results are very encouraging from the standpoint of its effectiveness as an insecticide, and its possible use in a number of different fields, no valid predictions about its future uses are possible now, or for some time to come.

DDT has a lasting quality. Sprayed surfaces retain toxicity for long periods, permitting a longer spraying season, beginning before leaf buds develop, and consequently providing still greater area coverage. In one experiment, in Pennsylvania for example, using aircraft spray of concentrated DDT, there was a complete kill of gypsy moth caterpillars in 20 acres of timber at the rate of only 5 pounds of DDT to the acre, in contrast to 25 to 30 pounds of cryolite or calcium arsenate.

This appears to be a major accomplishment. The scientist, however, realizes that DDT not only killed the caterpillars in that timber stand, but many other insects, some beneficial to forest growth and productivity. The Pennsylvania example illustrates why the farmer and gardener should not expect too much from DDT in the immediate future, nor even in the post-war period of adjustment, until further

tests for agricultural uses are completed and commercial supplies are on the market at a reasonable price. Even after it is available commercially and adequate formulae and standards can be recommended for DDT on the basis of large-scale field tests, farmers will continue to find use for standard and familiar insecticides.

### Outlook Very Bright

With or without DDT, however, the outlook for control of insects by use of insecticides has never been so bright, thanks to development of synergists, insecticide concentrates, new diluents, and new aircraft spray devices, to say nothing of such major achievements as Smear 62 for screwworm control to protect livestock, or the development of many repellents to protect man and animals against chiggers, mosquitoes, flies, and many other harmful and bothersome insects. Thanks to these and other advances, some of which cannot now be disclosed, when peace finally comes, people all over the world should be able to enjoy it in greater safety and comfort than was anywhere possible before the war.

And if the methods for protecting crops against loss or damage from insects are generally used—that is to say, if the practical knowledge and tools provided by scientific research are used, farmers generally will have better crops and greater yields than ever before.

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*Farm Production, Disposition, and income from milk, 1940-43 and miscellaneous dairy statistics.* Processed. 42 pp. Bureau of Agricultural Economics. Washington. April 1944.

Milk production lower in 1943 but income from milk at all-time high. Farm sales of whole milk most important. Sales of cream down.



# Farm Labor Today and Tomorrow

**A**FTER the war, according to the widespread belief, employers of agricultural labor no longer will have the problem now plaguing them of getting labor, and the kind of labor they want, when they want it. This is sheer wishful thinking.

In the immediate post-war period there will, no doubt, be a surplus of farm labor. How long the surplus lasts will depend on the time required for private industry to complete reconversion to peace-time production and for needed public works to get under way. From then on workers will be available to farms in ever lessening numbers.

The trend was this way before the war. Consider the rapid industrialization and urbanization of this country. In 1790, 5 percent of our people lived in cities of 2,500 or over; in 1850, 15 percent; and in 1940, 56½ percent. There is no reason to believe this urbanward trend will be reversed.

## Urban Growth Factors

Three factors have made this urban expansion possible: (1) mechanization and commercialization of agriculture with a subsequent reduction in labor requirements, (2) the high fertility rate which has prevailed in most rural areas, and (3) the great influx of European immigrants during the Nineteenth century.

Man has always used his adaptive power and inventive ability to make soil tilling easier. He has come a long way from his forefathers of a few generations ago in devising machines to work for him on the land.

The tractor with its complementary machinery, has largely replaced the horse and mule except in the South and in areas of small farms and hilly land in other parts of the country. The replacement of the binder by the combine to harvest grain is well known.

NOTE.—This article is condensed from a paper read by Mr. Hill last June before the Western Farm Economics Association at Los Gatos, Calif.

With pick-up attachments the combine is still making further inroads into those areas where a few years ago it was thought that binding and threshing, with large labor requirements, must continue. Segmented beet seed is reducing labor requirements for sugarbeet thinning. Better breeds of hogs, cattle and poultry make it possible for fewer people to produce more pork, beef, dairy, and poultry products.

The results of replacing open-pollinated varieties of seed corn with hybrid have been phenomenal. It has been estimated that the use of hybrid seed corn increased the United States corn crop nearly a half billion bushels in commercial corn areas last year. Because it took no more labor to plow, plant, and cultivate the acres in hybrid corn, the increased yield was produced without thousands of additional workers who would have been needed had open-pollinated corn been used.

## Labor Versus Machinery

During the 1930's, farm laborers passed through a very critical period. Wages were low with an over-abundance of farm help everywhere. Many unemployed urban workers sought refuge, at least temporarily, on the home farm. At the same time, refugees from the Dust Bowl fled to the West coast as Okies and Arkies. Many impoverished farmers, farm laborers, and croppers were kept alive during this period by relief checks, WPA work, and Farm Security grants. Looking back from our present vantage point, it can be seen that the immediate work opportunities for hired farm laborers were not improved by the steps taken to reduce farm labor requirements. Farmers, hard pressed by taxes and debt payments, tried in every possible way to reduce expenses and even though labor was cheap, mechanical methods, in many cases, proved much cheaper.

Mechanization and the adoption of other labor-saving practices are continuing. Farmers are pleading for additional machinery to replace hand labor.

Much has been done through successful farm management education to diversify farming operations. In the second and third decades of this century, diversification was put forth as the answer to crop failures in the single-crop catastrophies. Farm management specialists should be equally as aggressive in renewing a diversification campaign because of the wasteful labor aspects of single-crop enterprises. Such enterprises flourished in surplus labor days. Those days are gone—they are gone not to return.

### **Farm Birth-Rate Falling**

Another trend influencing the labor supply is the rural fertility rate. Economists, sociologists and others still refer to the farm as the seed bed of the Nation's population. Many have failed to observe, however, that in general it is only in the less economically advanced areas that relatively high replacement rates still obtain. Throughout the commercial farming areas of the country, farmers have reduced their birth rate. Some are no longer replacing their own numbers.

Furthermore, the urban way of life is still a drawing power so that a proportion of the diminishing number of young men and women raised on the Nation's commercial farms migrate to cities. The importance of this population trend to the social and economic organization of rural society can hardly be overestimated.

By and large, the European and Asiatic rural immigrant was drawn into farming areas already having members of his race and nationality. The pattern of settlement followed definite lines. In the settlement of the Midwest by the north Europeans, some nationality groups came prepared to purchase land and start out immediately as operators. This was

the case with the Swiss and the Belgians, and to a lesser extent among the Norwegians, Danes, and Germans. Most southern and eastern Europeans, however, left their home lands in such dire economic circumstances that periods of employment as laborers in factories or on farms had to be undergone to create the necessary savings required for farm investment. It is not strange, therefore, that in the migratory farm labor streams, there has been a preponderance of some cultural groups and almost a total absence of others.

Two developments in connection with this immigrant labor force need to be reckoned with. First, is the obvious one of a practical cessation of immigration; second, is the achievement of full ownership on the part of the immigrant, and his consequent withdrawal from the part-time hired labor force. Consequently, with each passing year, employers of agricultural labor have had to depend more and more on the native American. This source of supply becomes narrower in scope, and smaller in number, with attendant disadvantages to employer.

### **Farm Leaders Complacent**

During the early days of the war, farmers and farm leaders were generally complacent about the farm labor supply. By and large, agricultural economists, rural sociologists, and others who should have been aware of developments, were likewise unfamiliar, or at least disinterested in a probable farm labor shortage. Wages were low, farm prices were rising, and conditions were favorable for farmers, if not for farm workers. Overnight, as it were, the situation changed. Many war industries sent recruiters into the rural areas. Farm operators, their sons and daughters, and regular hired hands streamed into the war plants. Between April 1940 and a period shortly following our entry into the war, some four million actual or potential farm producers disappeared from the farm labor force.

About a million of the young men went into the armed forces.

It was no accident that this sudden farm labor shortage descended upon all of the commercial farming areas. The cultural forces which had for generations been slowing down the rate of population growth made the shortage inevitable. The impending development was retarded for a brief duration during the economic upheaval of the 1930's and the resultant maldistribution of population. The tuning-up period during the days of our "neutrality" and actual entry into the war rapidly dissipated the effects of the 1930 era and brought the American farmer face to face with a problem generations in the making.

### **Good Housing an Inducement**

After the temporary maladjustment of population incident to all wars is overcome, agricultural producers will need to face squarely the conditioning factors which will bring about the volume and type of workers they desire.

Workers of the type they want do not respond, as has been the case during the war, unless there are sufficient inducements. One of the chief of these is suitable and comfortable living facilities. In order to stimulate the movement of the professional agricultural migratory workers, the rapid advances made in California in the field of housing, largely under the sponsorship of the State labor housing agency, is a type of rural housing that should be continued. But, there need be no continuation of public housing other than in those rural communities where the operators are small and whose individual resources do not permit appropriate worker housing units. In these instances it is appropriate for community support to be added to the farmers' resources. On the whole, the most satisfactory operations in the farm labor program have been where housing has been provided by growers, especially where this housing im-

pressed workers with its comfort and cleanliness.

Government camps for migratory workers undoubtedly have met a need but they have their handicaps. For such ventures to be completely successful, social rapport needs to be brought about between the migrants and the citizens of the community. Integration comes as the result of social contacts. These contacts are stimulated when the communities have a responsibility for the construction of the centers and when the centers are introduced to provide for local needs.

If history is repeated there will come a period of downward revision of wages. Again, if the farmer is to avoid some of his previous difficulties he must not expect labor to absorb any more than his pro rata share of the adjustments. An encouraging development during the war should merit continued consideration of the producer. These are the profit sharing plans developed on a few farms in the West. They have marked similarity to the profit-sharing systems which have been gaining support in industry. In this connection, it should be noted that too little research in farm management is given over to analysis of income distribution between the employer and employee. There is more consideration given to labor in farm management research work than to credit and taxes, but all three have received too little attention.

### **Need for Health Care**

Will the time come when agricultural workers are organized as they are in many of our industries? Organization of agricultural workers is generally resisted on the part of the American farmer. But industry has seen that out of labor unrest comes unions. The farmer should know that his own forward looking steps are the best guarantees of achieving a pattern of wholesome labor relations.

Medical aid has been an integral part of the federally sponsored farm



labor program. All will agree that it is just as sound to care for the health of the worker as it is for the farmer to care for the health of his livestock. Here again, the best guarantee the American farmer has of having a reasonable and effective medical care system is his willingness to approach the matter open-mindedly and initiate a program mutually satisfactory to all concerned. Some industries, and a few farm operators, have conclusively demonstrated the value of a group health service covering all their workers.

Adequate medical care, where both workers and employers share costs, ranks next to housing as an inducement to farm workers. The importance of wages or income is exaggerated. More and more students of labor relations are finding that the wage earner, like the entrepreneur, is seeking the abundant life, and that the worker is willing to pay his share for those things which combine to make his life more abundant. He wants to live as well as work.

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## Canadian Agricultural Situation

**T**HE WAR has produced important shifts in Canadian agricultural production and trade. These shifts may have important post-war effects upon the foreign trade of the United States in agricultural products. Consequently, the present agricultural situation in Canada is of unusual interest to farmers in the United States.

### Changes in Wheat Output

Wheat production had increased rather steadily in Canada during the first three decades of the twentieth century, but was tending to decline as a result of several successive bad crops, and low prices for most of the years, from 1931 to 1937. With near-record crops in 1939 and 1940, and practically all of the continental European market cut off, huge stocks of wheat accumulated in Canada in the early years of the war. Rigid quota restrictions placed on wheat deliveries for the 1941 and 1942 crops and wheat acreage reduction payments, together with other measures encouraging the production of hogs and dairy products, helped to bring about a reduction in wheat acreage of almost 40 percent in 3 years, on one hand, and important acreage and production increases in feed grains and flaxseed on the other.

The majority sentiment at the 1944 agricultural objectives conference (similar to goals in United States), in view of the large world wheat surplus, was opposed to expansion of the wheat acreage, and the 1944 goal for wheat was set at 17.5 million acres, approximately the same as the acreage harvested in 1943. Reports of the Dominion Bureau of Statistics indicate the 1944 wheat acreage, however, to be between 30 and 35 percent above the 1944 objective.

The June 30 condition of spring wheat was 113 percent of the long-term yield, compared with 115 in 1943 and the record 136 percent in 1942. Although the visible supply of Canadian wheat in June of this year was reduced by heavy domestic consumption and exports to the lowest level since the summer of 1939, a continuation of favorable weather in the main Wheat Belt during the month of August would assure a supply sufficient to meet domestic needs in Canada, and provide large quantities for export.

In view of the continuing emphasis upon livestock production the 1944 objectives for coarse grains and forage crops were increased somewhat above 1943. The oats objective was increased by 6 percent, barley by 1 percent, mixed grain by 20 percent, and



corn for husking 53 percent. However, the increased planting of wheat has taken place mainly at the expense of oats, barley, flaxseed, and summer fallow and thus has reduced the feedstuffs acreage in the three Prairie Provinces below both the 1944 objectives and 1943 actual acreage. Although slightly below average, feed grain condition on June 30 was more favorable than on that date in 1943.

### Vegetable Acreage Up

Acreage of leafy, green, and yellow vegetables increased from 170,000 in 1940 to over 230,000 in 1943, and the goal set for 1944 is 320,000 acres. Root crops (i. e., beets, carrots, onions, table turnips) increased from 224,000 acres in 1940 to 318,000 in 1943, and the 1944 goal is 360,000 acres. The needed production of tomatoes for canning and fresh market was not attained the last 2 years. Producers are being strongly urged by Dominion officials to increase their 1944 production of tomatoes for domestic consumption, and of dried beans and peas for relief purposes.

Apple, pear, peach, grape, and berry production made important increases during the 1920's and 1930's, and has on the whole been rather stable during the war, except for grapes which has tended slightly to increase and for strawberries which has tended to decline during the last 2 or 3 years. This year's strawberry

crop was 40 percent below last year's and 62 percent under the 1935-39 average. There was a very short crop of peaches and apricots in 1943, but prospects are better for this year's crop. Prospects at the beginning of August point to a large apple crop for 1944.

### Big Livestock Increase

The number of hogs on farms has reached the highest level in history. As of December 1, 1943, they numbered some 9,500,000 head, an increase of 22 percent over the corresponding date in 1942, and twice the number at the beginning of the war.

Some difficult shifts have taken place in the dairy and poultry products trade during the war. In the face of a heavy domestic demand for fluid milk and butter, and a shortage of labor, the Canadian Government effected an increase in production of cheese for export from a pre-war figure of 80 to 90 million pounds annually to more than 140 million pounds in 1942. During the same period, great shifts were also made in the production and export of concentrated milk products.

### Foreign Trade Shifts

The leading foods produced in Canada for export prior to the war were grain and grain products, particularly wheat and wheat flour, meats, fish, and apples. Other exports of importance were potatoes, cheese, live

Canadian Acreage and 1944 Planting Intentions of Selected Crops

Commodity (in planted acres)	1936-40 average	1942	1943	1944 objective (goal)	1944 intentions to plant	1944 intentions as percentage of—	
						1936-40	1943
	Thousands	Thousands	Thousands	Thousands	Thousands	Percent	Percent
Wheat.....	26,518	21,587	17,488	17,500	21,642	82	124
Oats.....	12,887	13,782	15,407	16,377	14,950	116	97
Barley.....	4,382	6,973	8,397	8,500	7,873	180	94
Rye.....	879	1,338	576	501	472	54	82
Mixed grain.....	1,180	1,681	1,463	1,760	1,574	133	108
Corn (for husking).....	176	358	257	393	(1)	-----	-----
Soybeans.....	10	43	50	90	(2)	-----	-----
Flaxseed.....	322	1,492	2,948	2,800	2,070	643	70
Potatoes.....	524	506	533	559	538	103	101

<sup>1</sup> Intentions not available, but reported to be considerably above 1943.

<sup>2</sup> Reported to be somewhat above 1943.

**Canadian Exports of Grains and Flaxseed (for Crop Years Beginning Aug. 1 and Ending July 31)**

Commodity	1936-40 average	1942-43	1943-44 <sup>1</sup>
	<i>Million bushels</i>	<i>Million bushels</i>	<i>Million bushels</i>
Wheat.....	178	212	300
Oats.....	13	58	65
Barley.....	12	35	50
Flaxseed.....	(2)	5	10

<sup>1</sup> Preliminary.

<sup>2</sup> 67 thousand bushels.

cattle, and of increasing importance in the years preceding the war, canned fruits, canned vegetables, and processed milk.

During the war, exports of wheat and wheat flour have been maintained on a more stable basis, and on the whole at a higher level than in the pre-war years, largely a result of bulk purchases by the British Ministry of Food. Exports of feed grains to the United States have for the last 2 years been greatly above pre-war shipments to this country.

Before the end of June of the Canadian 1943-44 crop year (August 1 to July 31) Canada had supplied 144 million bushels of wheat to the United States, most of which was for feed purposes, and more than 60 million bushels of oats, nearly 28 million bushels of barley, nearly 9 million bushels of rye, and in the neighborhood of 10 million bushels of flaxseed. The grain crop prospects in Canada as of July 1, are very promising—yet it appears that the United States would not be able to obtain the same quantities of feed grains from Canadian sources in 1944-45 as were obtained in the year 1943-44.

Exports of beef during the last 2 years have run from a half to two-thirds above the average pre-war shipments, also due largely to bulk purchases of the British Ministry of Food. The Dominion Government has prohibited exports of beef and of live cattle for slaughter to the United States since the summer of 1942, as the United Kingdom has been taking all the available export surplus of beef.

The most phenomenal increase of exports has been in bacon and ham. Cured and fresh pork exports, excluding offals, steadily increased from 1940 to the end of 1943. By the end of December 1943, more than 2 billion pounds of bacon and ham had been delivered under the four wartime bacon agreements between Canada and the United Kingdom. During the final weeks of the 1942-43 agreement, reports the Dominion Department of Agriculture, weekly export purchases at times exceeded 20 million pounds, or twice the amount of bacon shipped to Britain in the entire calendar year 1931.

Prior to the war, Canadian exports of eggs were a minor item. The demand by Great Britain for dried eggs, however, has increased annually during the war. The new 2-year contract, announced in April, calls for an annual delivery equivalent to 48 million dozen shell eggs.

Foreign trade in fruits and vegetables has also been greatly affected by the war but rather more adversely than is the case with livestock products. Overseas exports of Canadian fresh and canned fruits and vegetables have been reduced to a fraction of the pre-war level, because of the lack of shipping space for such bulky commodities. Increased exports of dried fruits have partially compensated for the loss, and there has been a substantial increase in the domestic consumption of apples, potatoes, and of certain vegetables formerly canned for export. Imports of fresh tomatoes

**Canadian Exports of Selected Livestock Products (Calendar Years)**

Commodity	1936-40 average	1942	1943
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
Bacon and pork <sup>1</sup> .....	226.0	550.5	621.3
Cheese (cheddar).....	89.9	141.5	129.7
Beef <sup>2</sup> .....	8.9	16.0	13.5
Butter.....	5.4	1.6	8.5
Mutton and lamb.....	.2	.6	.9
Lard.....	17.3	1.6	.7

<sup>1</sup> Excludes offals.

<sup>2</sup> Excludes offals and veal.

and both fresh and canned citrus fruit from the United States have increased, the total citrus imports having increased nearly two-thirds above the pre-war average.

### Civilian Food Supplies

If allowances are made for the regional differences within the two countries, the nutrition of Canada and United States is very similar in comparison with many other countries. The Canadian diet varies considerably by regions because of the difference in the types of foodstuffs produced in certain Provinces. Fruits and vegetables, for example, are more plentiful in the lower sections of Ontario and Quebec than in the more northerly or drier parts of the Dominion.

As in the United States the food supplies moving into civilian consumption in Canada have for the most part been maintained at the pre-war level or raised above that level from 1940 through 1943. From about 55 pounds per capita of milk and milk products (in terms of milk solids, excluding butter) supplies have gradually risen since 1940, until they reached 64 pounds in 1943. Meat supplies had increased 12 percent by 1943, egg supplies by 24 percent and tomatoes and citrus supplies by 20 percent.

Supplies of poultry, oils and fats, and potatoes underwent lesser changes, but were above the pre-war level for most of the war years. Supplies of a few products, notably sugar, certain fruits and fruit products other than citrus, and vegetables other than potatoes, were considerably lower for some of the war years than prior to the war. The Canadian food situation may be expected to further improve in 1944 if there are good fruit and vegetable crops.

Three factors were largely responsible for the improved food situation in Canada. These were (a) the increased supplies of food made available for civilian consumption by shifts in production from wheat to various other commodities, (b) increased purchasing power resulting from a high level of employment among different groups of the population, and (c) the wartime nutrition program of the Canadian Government. The agricultural subcommittee of the Canadian Committee on Reconstruction has recommended that a national nutrition policy should be established for the post-war period. The Dominion's Deputy Minister of Agriculture has declared that "nutrition for war will become nutrition for peace."

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## Do Consumers Want Dehydrated Foods?

**W**ILL THE American housewife use dehydrated foods if made available to her? What dehydrated foods does she like and dislike? Definitive answers are, of course, impossible because individual food tastes vary so much. But a recent study shows much less resistance to the acceptance of dehydrated foods than was anticipated.

Answers to these questions are needed in order to help determine the post-war level of dehydrated food production. Military and lend-lease

requirements have brought about a tremendous expansion in facilities for dehydrating foods. For example, production of dehydrated vegetables jumped from 25 million pounds in 1941 to an expected 225 million pounds in 1944; similar increases have taken place in dried egg output and to a lesser extent for dried milk. When military and lend-lease requirements decline after the war, will there be a consumer demand to maintain the production of dehydrated foods at anywhere near the present level?



To find some clue to these and similar questions, and thus determine, at least partially, the possible future demand for dehydrated foods, a survey was conducted by the Department of Agriculture in April and May of this year among about 450 Chicago housewives and their families. This sample is representative of the Chicago population and so the findings of the survey are believed representative of the reactions of Chicago housewives generally. Foods used in the survey were diced white potatoes, riced white potatoes, sweetpotatoes, beets, carrots, cranberries, milk, and eggs. Each housewife was given three of the foods in sufficient quantity to serve at more than one meal, and the housewives were divided into three groups according to the foods given them.

Without attempting to influence the attitude of the housewives, except to determine previous experience with dehydrated foods, each was given her food and told the interviewer would return in 2 weeks. About three-fourths of the housewives participating in the survey had heard of dehydrated foods, and nearly half had used them. Dehydrated soup had been heard of and used most frequently. Only about 5 percent of the sample had an unfavorable opinion of dehydrated foods prior to the survey.

### **Cost Factors**

While more than half of the housewives participating in the survey said they would buy some dehydrated foods, the data do not indicate that housewives in general would buy large quantities of such foods as substitutes for the fresh or canned product. Most housewives willing to buy dehydrated foods would not do so if they cost more than fresh, while about a third would buy them only if they cost less. On the other hand, over half of the housewives are willing to pay more for dehydrated foods, except potatoes, than for canned foods.

This study seems to indicate that housewives do not necessarily regard

dehydrated foods as "cheap foods"—less than 10 percent of the women thought persons with very low incomes would be attracted to them.

### **Taste and Preparation**

Chief reasons why housewives said they would buy some dehydrated foods were because they liked the taste and found them easy to prepare. Likewise, the chief reasons given for not wanting to buy such foods were because they did not like the taste and were difficult to prepare. Few housewives mentioned nutritive value of dehydrated foods, the fact that they keep longer than fresh foods, or that they save space. Apparently, taste and preparation are the principal factors housewives have in mind when judging dehydrated foods.

About three-fourths of the housewives using the foods liked their taste while a fifth disliked them. Cranberries and sweetpotatoes were the best liked, riced potatoes the least liked. Although a few said some of the dehydrated foods tasted better than fresh foods, most said they did not. The housewives generally found little difference in the taste of dehydrated cranberries and sweetpotatoes as compared with the fresh product.

A larger proportion of the women preferred the dehydrated foods to the canned varieties. Many were unfamiliar with diced potatoes, riced potatoes, and sweetpotatoes in canned form, but those who were, preferred the dehydrated form.

Less than 10 percent of the housewives said the preparation of the dehydrated foods was difficult. In fact, many pointed out that the vegetables were easy to prepare because peeling and cleaning were unnecessary, and that other things could be done while the foods soaked. Those who did have difficulties found it hard to achieve the desired texture and appearance—carrots were "hard as rocks," potatoes were lumpy or soggy, and mashed potatoes had a grayish color.



Although the time required for preparing dehydrated foods varies from product to product, most women said the dehydrated form took less time to prepare than fresh foods or that there was very little difference in time between the two types. The survey indicates that preparation time is not an important consideration in deciding whether the foods will be bought.

The housewives did not believe that dehydrated foods were 'nutritionally different from fresh foods, but a few thought them more so than the canned product.

Taste and ease or difficulty of preparation appear to be the principal factors motivating housewives' acceptance or rejection of dehydrated foods. Advertising and educational programs might, of course, make them more conscious of the importance of other qualities. These results point to the importance of improving the taste of dehydrated foods if wider consumer acceptance is to be obtained.

#### Future Possibilities

This investigation of consumer reaction to dehydrated foods is an initial effort and considerable caution should be exercised in interpreting the results. The study may exaggerate consumer preference because the participants may have been motivated to some extent by a mistaken desire to help by furnishing favorable results for the survey. Equally important is the fact that the initial sales resistance to a new product was overcome because the housewives were given free samples. Thus the proportion of all housewives willing to buy dehydrated foods is based upon a proportion of consumers who did not have to go through the process of choosing and buying a new product. The specific findings, however, are reasonably consistent with each other and the results of tests applied to the findings, common to such surveys, lend confidence in the general indications.

The real significance of the results of this study is that a large proportion of housewives do not appear to be

definitely prejudiced against dehydrated foods, as many have assumed, and will consider them along with competitive foods when making purchases. This suggests that there may be a substantial post-war civilian market for many dehydrated foods. But there appears to be significant differences in consumer acceptance of different dehydrated foods—some are much more acceptable than others.

Time may alter the indicated acceptability of dehydrated foods. This acceptability will be affected by consumer knowledge of future changes in their quality relative to that of competitive products, by possible reductions in the time required for reconstitution, by changes in packaging, by advertising and promotional campaigns, by the development of new and improved recipes, and by changes in relative prices.

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*Soybeans Harvested for Beans, Acreage, Yield, and Production, 1940-1943*, by Counties for 15 Principal States. Processed. 54 pp. Bureau of Agricultural Economics. Washington. May 1944.

1943 production in 15 States represents 98 percent of United States production.

*Farm Production, Farm Disposition, and Value of Sorghums for Grain, by States, 1929-41*. Processed. 8 pp. Bureau of Agricultural Economics. Washington. May, 1944.

Series for sorghums for grain extends from 1929 to 1941. Estimates prepared on this basis only since 1929.

*Work Performed and Feed Utilized by Horses and Mules*. A. P. Brodell and R. D. Jennings. Processed. 26 pp. Bureau of Agricultural Economics. Washington. June 1944.

Farmers now have fewer work animals than in a half century with further declines in prospect. Hours animals are worked vary with age. Use of grain as feed for horses and mules varies in different parts of country but is closely related to time worked. Corn, oats, hay, and pasture principal feeds.

# Economic Trends Affecting Agriculture

Year and month	Industrial production (1935-39 = 100) <sup>1</sup>	Income of industrial workers (1935-39 = 100) <sup>2</sup>	1910-14=100				Index of prices received by farmers (August 1909-July 1914 = 100)			
			Wholesale prices of all commodities <sup>3</sup>	Prices paid by farmers		Farm wage rates	Livestock and products			
				Commodities	Commodities interest and taxes <sup>4</sup>		Dairy products	Poultry and eggs	Meat animals	All livestock
1934.....	75	76	109	122	128	95	101	89	70	84
1935.....	87	86	117	125	129	103	114	118	116	115
1936.....	103	100	118	124	128	111	125	114	118	120
1937.....	113	117	126	131	133	126	130	110	132	127
1938.....	89	91	115	123	126	125	114	108	115	113
1939.....	109	105	113	121	124	123	110	95	112	108
1940.....	125	119	115	122	125	126	119	96	111	112
1941.....	162	169	127	131	132	154	139	121	146	140
1942.....	199	238	144	152	150	201	162	151	188	173
1943.....	239	305	151	167	162	264	193	190	209	200
1943-July.....	240	306	151	169	164	274	189	183	209	198
August.....	242	312	151	169	164	-----	192	192	208	200
September.....	245	315	151	169	164	-----	195	201	208	203
October.....	247	317	150	170	165	280	198	212	204	204
November.....	247	318	150	171	166	-----	202	219	193	201
December.....	421	316	151	173	167	-----	203	212	194	200
1944-January.....	243	319	151	174	168	275	201	177	194	193
February.....	244	321	151	175	169	-----	201	168	199	194
March.....	241	318	152	175	169	-----	199	162	203	194
April.....	244	313	152	175	169	292	196	151	203	191
May.....	237	313	152	175	169	-----	194	153	201	190
June.....	235	-----	151	176	170	-----	192	154	200	186
July.....	-----	-----	152	176	170	328	194	165	197	190

Year and Month	Index of prices received by farmers (August 1909-July 1914=100)								Parity ratio <sup>5</sup>	
	Crops							All crops and live-stock		
	Food grains	Feed grains and hay	Tobacco	Cotton	Oil bearing crops	Fruit	Truck crops			All crops
1934.....	91	95	159	97	95	88	95	98	90	70
1935.....	97	107	174	94	120	82	119	102	109	84
1936.....	108	102	165	95	112	92	104	107	114	89
1937.....	120	125	204	90	120	104	110	115	122	92
1938.....	75	71	176	67	88	70	88	80	97	77
1939.....	72	69	155	70	90	68	91	80	95	77
1940.....	84	82	136	77	96	73	111	88	100	80
1941.....	97	89	159	107	130	85	129	106	124	94
1942.....	120	111	252	149	172	114	163	142	159	106
1943.....	148	147	325	160	190	179	245	183	192	119
1943-July.....	147	151	321	158	183	216	220	188	193	118
August.....	147	152	326	160	196	202	186	183	192	117
September.....	150	156	315	163	199	205	180	182	193	118
October.....	157	158	335	164	201	195	187	183	194	118
November.....	160	158	347	156	202	196	228	187	194	117
December.....	166	165	349	160	202	208	223	192	196	117
1944-January.....	170	168	350	162	203	204	267	199	196	117
February.....	170	169	348	161	205	206	247	196	195	115
March.....	169	171	351	161	207	215	242	198	196	116
April.....	171	172	253	163	207	237	220	200	196	116
May.....	170	173	350	160	208	232	225	198	194	115
June.....	165	170	350	163	210	228	231	197	193	114
July.....	161	168	350	164	209	230	195	194	192	113

<sup>1</sup> Federal Reserve Board, adjusted for seasonal variation, revised November 1943.

<sup>2</sup> Total Income, adjusted for seasonal variation, revised March 1943.

<sup>3</sup> Bureau of Labor Statistics.

<sup>4</sup> Revised.

<sup>5</sup> Ratio of prices received by farmers to the revised index of prices paid, interest and taxes.

NOTE.—The index numbers of industrial production and of industrial workers' income, shown above are not comparable in several respects. The production index includes only mining and manufacturing; the income index also includes transportation. The production index is intended to measure volume, whereas the income index is affected by wage rates as well as by time worked. There is usually a time lag between changes in volume of production and workers' income since output can be increased or decreased to some extent without much change in the number of workers.